

ControlEdge™ RTU Enables CBM Producer to Optimize Gas Production and Gas Metering

Case Study

“By implementing an advanced Remote Terminal Unit (RTU) solution for natural gas metering in remote locations, we were able to achieve operations that are safe, predictive and diagnostic.”

- Project Manager, Major Asia-Pacific Coal Bed Methane (CBM) Producer

Background

Coal Bed Methane (CBM) production is a form of unconventional gas recovery, which typically involves thousands of gas wells, with roads, pipelines, compressor stations, wastewater dams, and other infrastructure.



Development of a CBM project is a demanding endeavor.

A major CBM producer in the Asia-Pacific region required an effective solution for gas metering. Collecting complete data to monitor production can be difficult. If done manually, it can be time-consuming and labor intensive as production locations can be not only in remote locations, but require travel over a wide area. Manual information gathering and reporting is delayed and can be inaccurate. Worker safety can also be a potential problem where exposure to methane gas is possible.

Challenge

Gas producers must find ways to lower the capital and operating costs for large distributed operations which is most commonly performed through carefully designed automation systems.

In a typical gas industry application, data must be moved from remote locations via an RTU (Remote Terminal Unit). The RTU then sends the data to a host system by radio transmission. This could be a Distributed Control System (DCS), Supervisory Control and Data Acquisition (SCADA) platform or similar centrally located computer-based system.

Today's gas operators require smart and flexible data management that can significantly increase operational efficiency, improve reliability, lower maintenance costs, and reduce operator trips to the field. In particular, they're seeking compact scalable solutions to simplify the design of their wellhead controllers, as well as integrated HART® I/O to eliminate costly HART hardware.

Being low flowing, CBM wells are required in their thousands to achieve commercial gas quantities; requiring a manufacturing-like process to complete, say, 2 wells per day.

Solution

The CBM producer sought to eliminate manual data collection at its remote sites – a time-consuming and inaccurate procedure. The company also wanted to replace outdated legacy controllers, which lacked

Development of a coal bed methane gas project is a demanding endeavor. Critical assets are widely scattered over areas where environmental conditions are harsh, with very high or low temperature, high altitude, or underdeveloped power and communication infrastructure.

Honeywell's RTU technology suits a large number of installed assets and allows systems physically scattered over CBM fields to operate as one integrated system.

advanced automation capabilities to optimize operations and suffered from a lack of supplier support.

As part of an expansion project, the CBM producer contracted with Honeywell as its main automation contractor (MAC) to supply the ControlEdge™ RTU and associated programming services, including Experion® SCADA configuration for bi-directional nomination control on a tie line between two gas pipelines.

The scope of the control application included interface of ultrasonic flowmeter diagnostic information for quality control via Modbus, HART data from all instruments, and American Gas Association (AGA) gas flow calculations to record gas flow in each direction and control valves for desired nominations. Communications to the SCADA system would be handled via radio.

The ControlEdge RTU solution offers unique capabilities:

- Low power consumption – ideal for remote installation and operation on solar power
- Native controller redundancy – no switch required for I/O communication
- HART-enabled onboard I/O and expansion I/O modules
- Removable and plug-in terminal blocks simplify wiring and reduce time for cabinet assembly
- Onboard wireless I/O solution integrates ISA100 instruments – no specialized module needed

- Built-in HART I/O, and ISA100 field instrument integration with Field Device Manager (FDM)
- Flow calculations independently validated against Canada's AER Directive 17
- ISO, AGA and API-based calculations for oil and gas metering



ControlEdge RTU provides robust, HART-enabled onboard I/O.

Experion SCADA provides intuitive control, enhances operator effectiveness, and ensures optimum flexibility with Honeywell's Distributed System Architecture (DSA). It allows multiple servers to operate as one within a single asset or across the enterprise, and provides seamless global access to points, alarms, interactive operator control messages and history.

Integrated with the Experion SCADA system, ControlEdge RTU simplifies configuration over thousands of assets and enables operational efficiency with an advanced Human-Machine Interface (HMI).

Honeywell's local presence in the Asia-Pacific region and proven natural gas industry expertise were essential on this project. The customer is now assured of fast response to problems and complete on-site support.

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For More Information

To learn more about how Honeywell's ControlEdge RTU can optimize performance, visit www.honeywellprocess.com or contact your Honeywell Account Manager.

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AP-17-08-ENG
July 2017
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